

1. A computer system, comprising:  
a computer processor,  
an operating system operative in connection with the computer processor,  
a display responsive to the operating system,  
a pointing device including:  
a position sensor having an output line, and  
a tactile actuator having an input line,  
a pointing device driver responsive to the output line of the position sensor and wherein  
the input line of the tactile actuator is responsive to the pointing device driver,  
a general-purpose application responsive to the pointing device driver and to the  
operating system and in communication with the display, and wherein the pointing device driver  
is responsive to the general purpose application, and  
a profile that maps region changes associated with material displayed on the screen to  
tactile signals to be sent to the tactile actuator.
2. The computer system of claim 1 wherein the system is operative to detect movement  
from one group of regions to another and change profiles based on the detected movement.
3. The computer system of claim 2 wherein the system is further operative to send a  
boundary actuation command to the tactile actuator upon detecting the movement from one  
group of regions to another.
4. The computer system of claim 2 wherein the groups of regions correspond to different  
display windows.
5. The computer system of claim 1 wherein the system is operative to automatically  
determine a range of region attributes and normalize the intensity of the tactile signals based on  
this determination.



device housing.

14. The computer system of claim 13 wherein the pointing device is a mouse, wherein the housing is a housing of the mouse, and wherein the transducer is mounted inside the housing of the mouse.

15. The computer system of claim 13 wherein the system is operative to send finite duration pulses to the actuator that are no longer than ten cycles long for an individual change in regions.

16. The computer system of claim 1 wherein the position sensor is in a mouse and wherein the actuator is in a mouse pad.

17. The computer system of claim 1 wherein the actuator and the position sensor are in a touch pad.

18. The computer system of claim 1 wherein the profile maps regions that match display regions displayed on the display.

19. The computer system of claim 18 wherein the profile maps regions that correspond to absolute display intensity of the display regions.

20. The computer system of claim 18 wherein the profile maps regions that are arranged in a regularly spaced Cartesian grid.

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